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Pollination biology of *Stenocereus queretaroensis* and the importance of bat pollination services

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Recent activity of the Research Committee

Pollination biology of *Stenocereus queretaroensis* and the importance of bat pollination services.

Stenocereus queretaroensis is endemic to central western Mexico. It has been hugely important for the subsistence of local people for centuries and is now cultivated commercially for its fruit (the pitaya), providing one of the main income streams for the town of Techaluta de Montenegro.

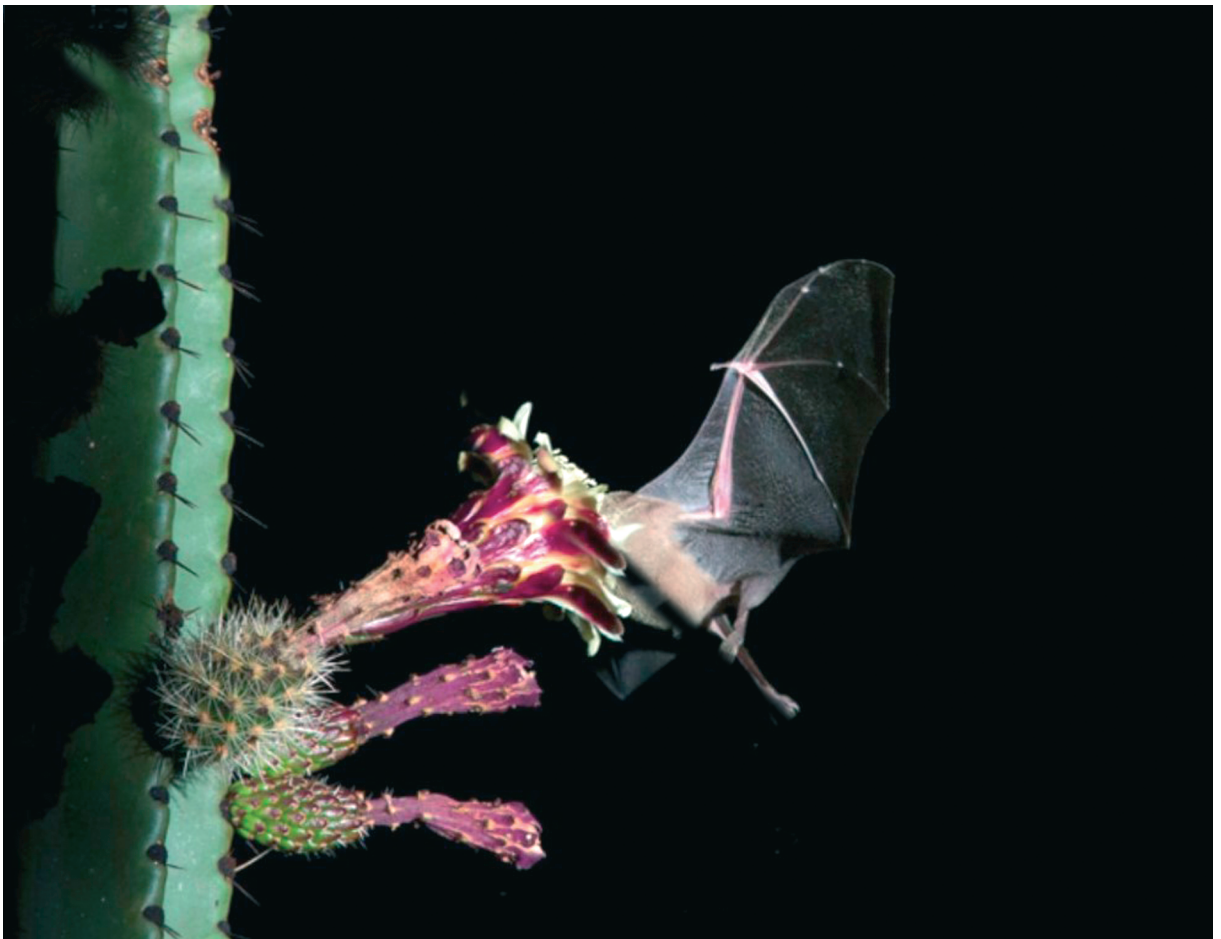
Connie Tremlett, from the University of Southampton, visited the small town nestled in an incredible landscape in the State of Jalisco. Her aim was to find out more about the pollination biology of this cactus to help inform local management.

In 2016 exclusion experiments were set up on cacti in pitaya plantations and on ranches, by placing bags of different mesh sizes over flowers during the day and/or night to expose the flowers to certain pollinators only. For example, the bags could prevent birds and insects from accessing flowers during the day, but allow bats to reach them at night. Flowers were

monitored to record whether they successfully developed into fruits and the fruits were collected for weighing and seed counts.

Bats are important pollinators in tropical regions and many species of columnar cacti in Mexico have a close relationship with nectar-feeding bats. Connie found that pollination by bats not only increased fruit yield for pitaya farmers, but also increased the size of fruits (thereby increasing the value of fruits as bigger fruits are sold at higher prices) and seed set. The principal pollinator is *Leptonycteris yerbabuenae*, the lesser long-nosed bat, a migratory species which travels along 'nectar corridors' between Mexico and the USA, pollinating many species of cacti and agaves en route.

Colin Walker,
Chair, BCSS Research Committee



A *Leptonycteris* bat visiting a *Stenocereus queretaroensis* flower to feed on nectar and pollen (Photo: César Guzmán)